JP2004-254950

FIG.1

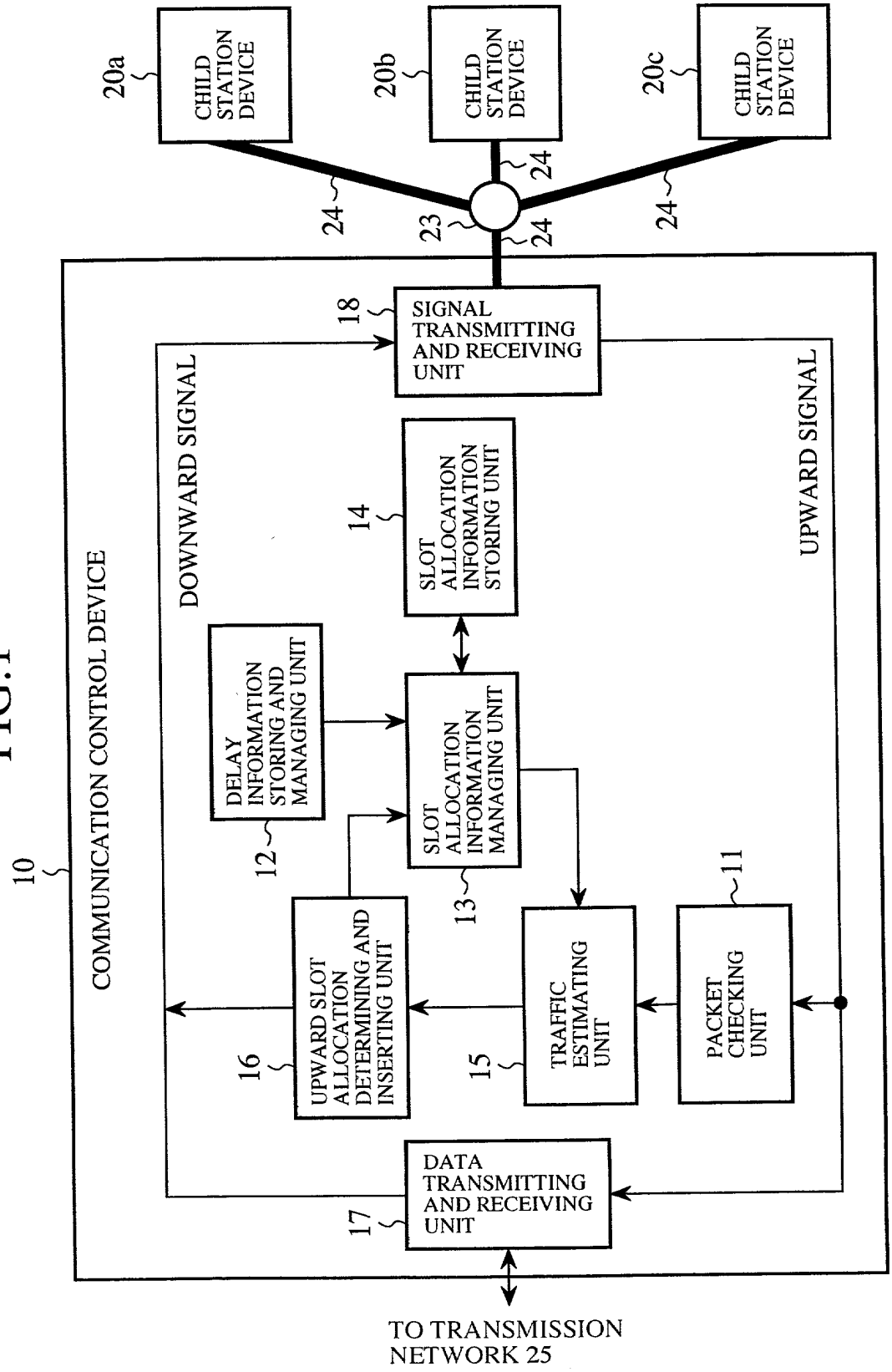


FIG.2

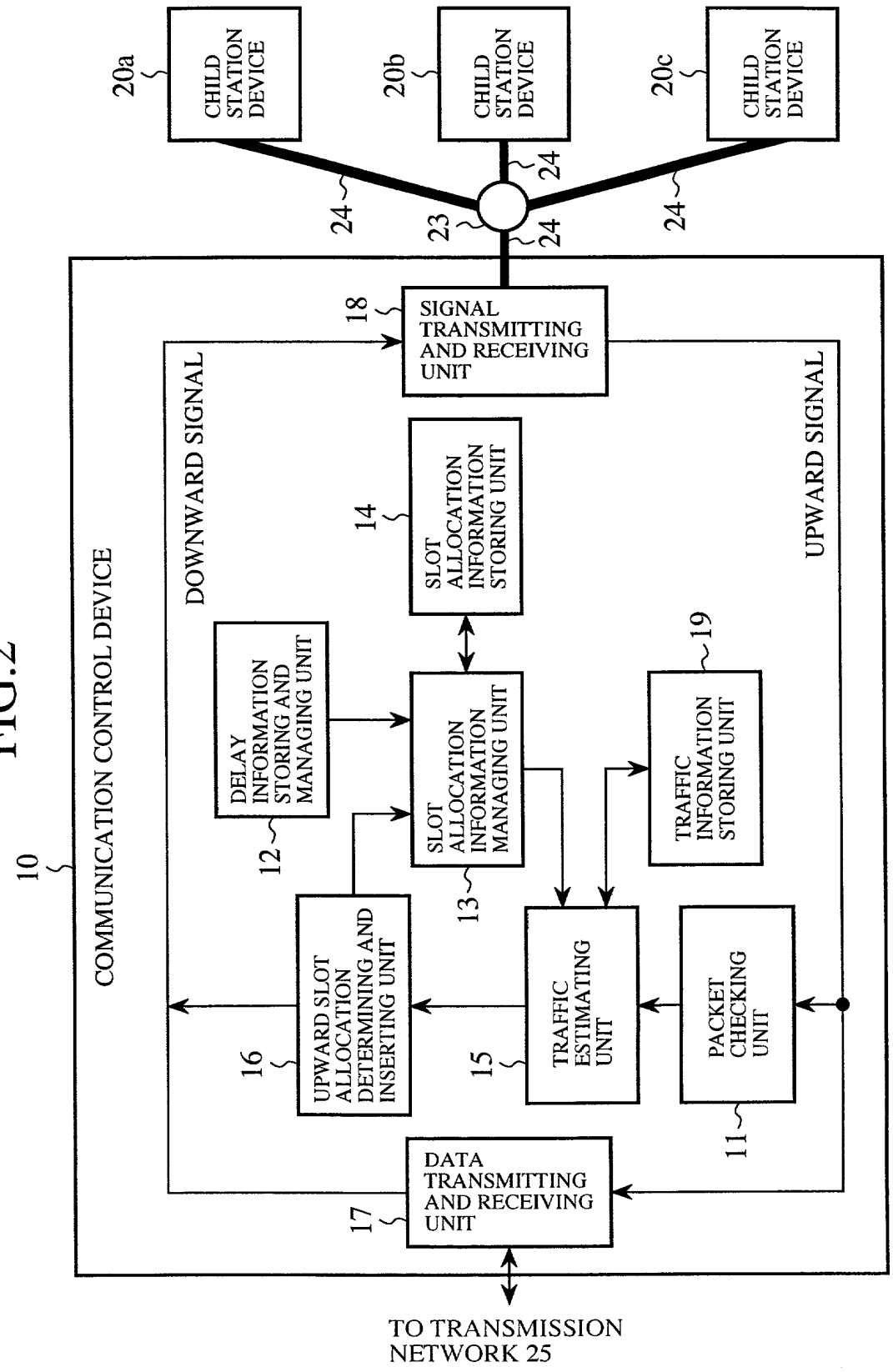
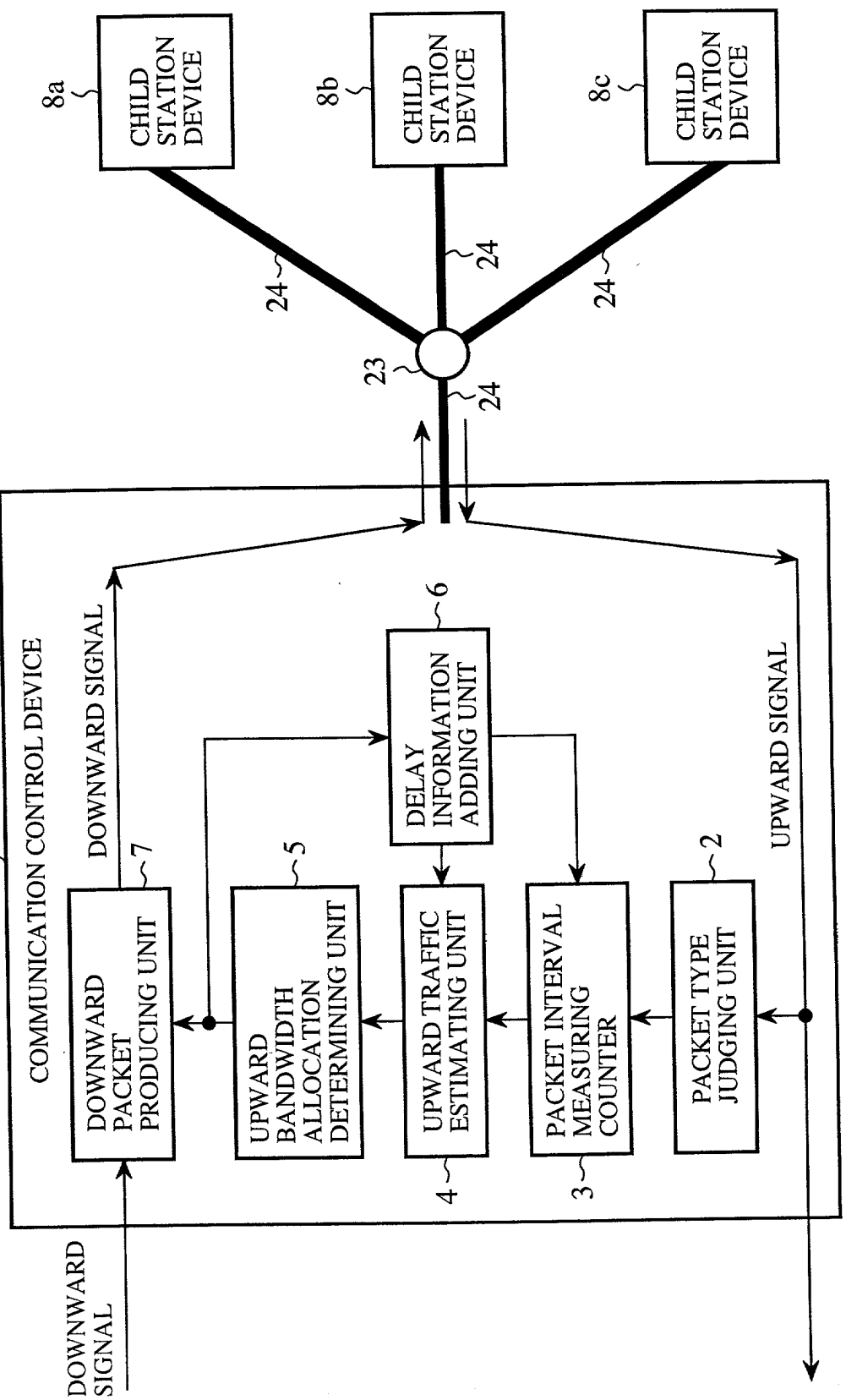

20a
CHILD STATION DEVICE
20b
CHILD STATION DEVICE
20c
CHILD STATION DEVICE
24
24
23
24
24
10
COMMUNICATION CONTROL DEVICE
18
SIGNAL TRANSMITTING AND RECEIVING UNIT
DOWNWARD SIGNAL
UPWARD SIGNAL
14
SLOT ALLOCATION INFORMATION STORING UNIT
DELAY INFORMATION STORING AND MANAGING UNIT
12
SLOT ALLOCATION INFORMATION MANAGING UNIT
13
19
TRAFFIC INFORMATION STORING UNIT
UPWARD SLOT ALLOCATION DETERMINING AND INSERTING UNIT
16
TRAFFIC ESTIMATING UNIT
15
PACKET CHECKING UNIT
11
DATA TRANSMITTING AND RECEIVING UNIT
17
TO TRANSMISSION NETWORK 25

FIG.3


8a
CHILD STATION DEVICE
8b
CHILD STATION DEVICE
8c
CHILD STATION DEVICE
24
24
24
23
24
1
COMMUNICATION CONTROL DEVICE
DOWNWARD SIGNAL
UPWARD SIGNAL
DOWNWARD PACKET PRODUCING UNIT
7
UPWARD BANDWIDTH ALLOCATION DETERMINING UNIT
5
DELAY INFORMATION ADDING UNIT
6
UPWARD TRAFFIC ESTIMATING UNIT
4
PACKET INTERVAL MEASURING COUNTER
3
PACKET TYPE JUDGING UNIT
2
DOWNWARD SIGNAL

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# FIG.4

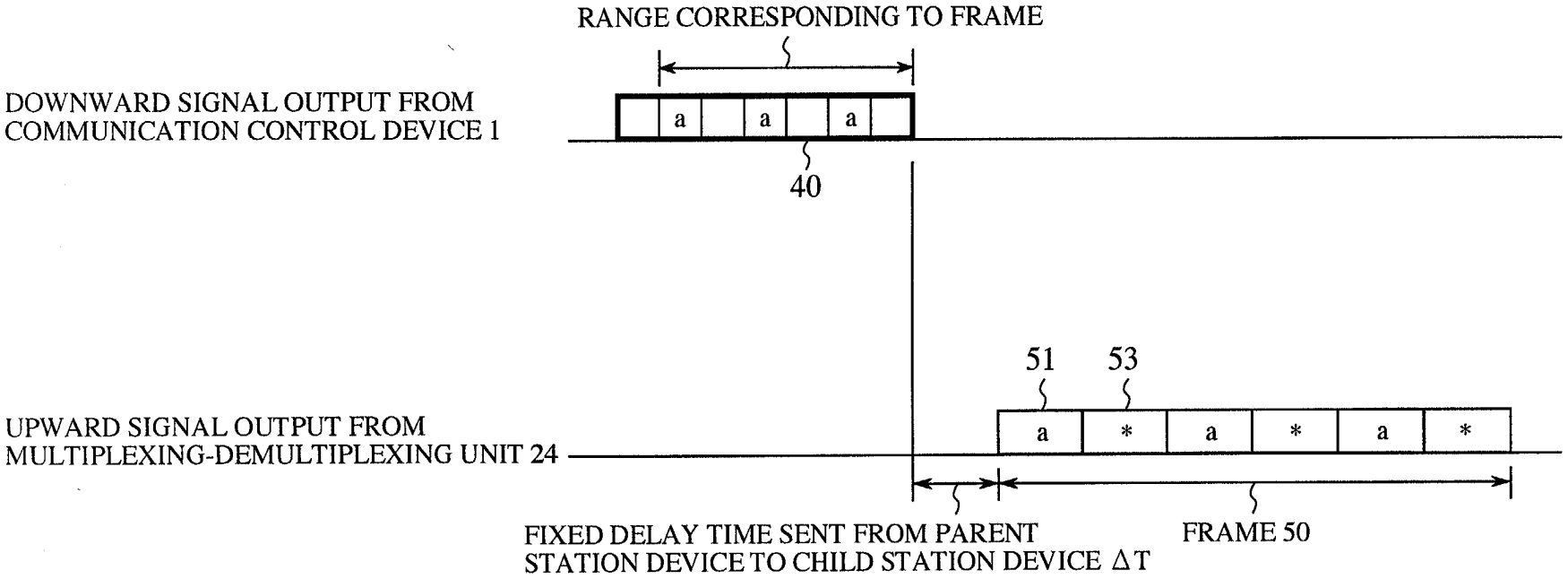


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FIG.5A

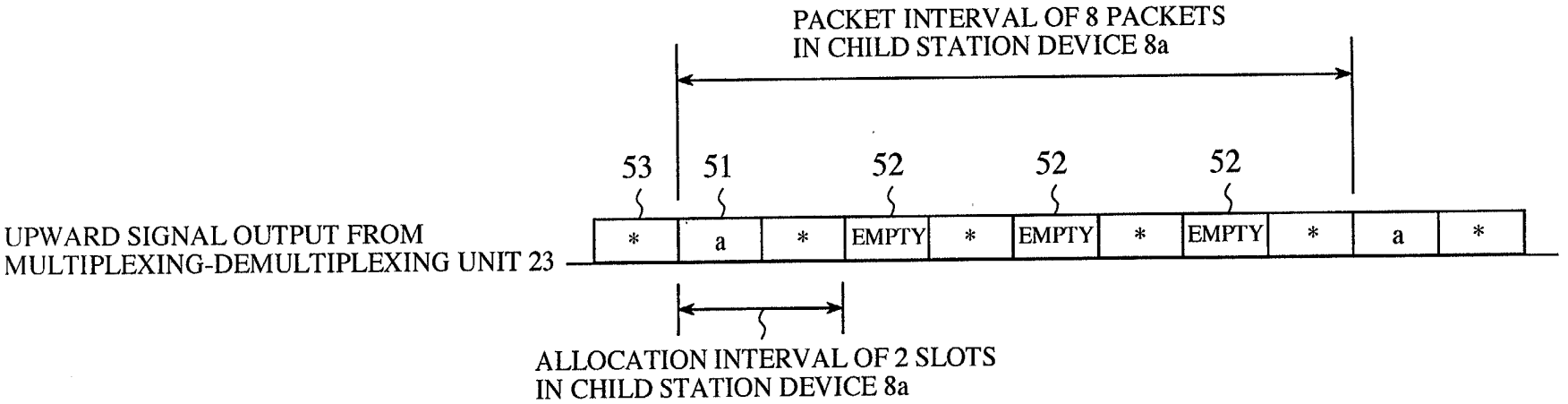


FIG.5B

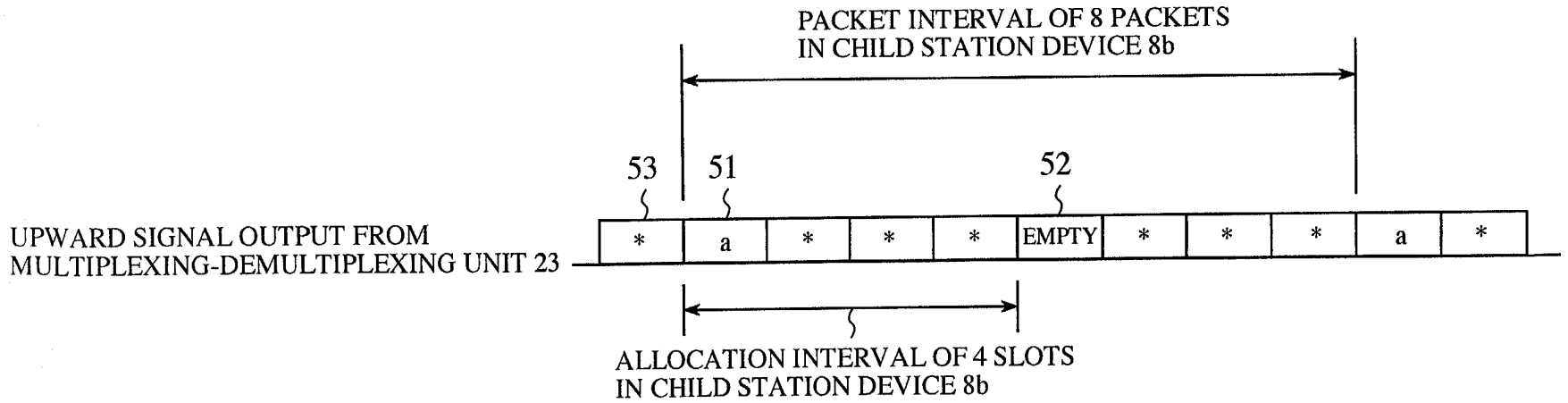




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FIG.6

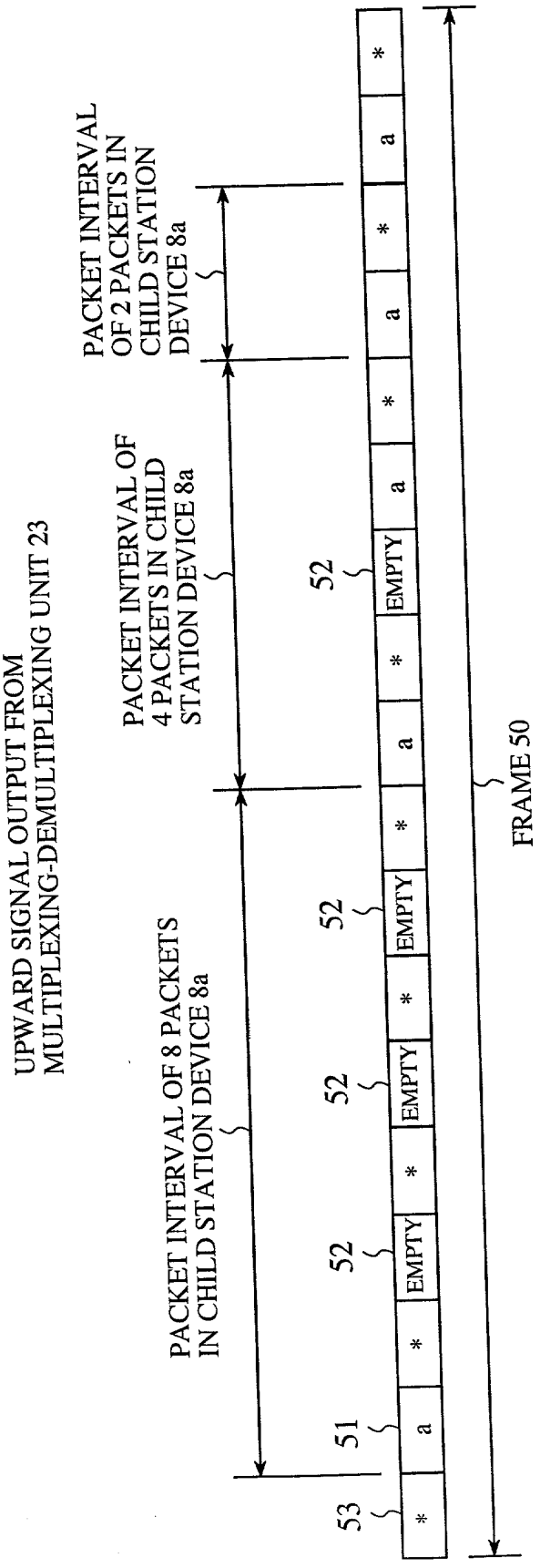
UPWARD SIGNAL OUTPUT FROM
MULTIPLEXING-DEMULTIPLEXING UNIT 23
PACKET INTERVAL OF 8 PACKETS
IN CHILD STATION DEVICE 8a
PACKET INTERVAL OF
4 PACKETS IN CHILD
STATION DEVICE 8a
PACKET INTERVAL
OF 2 PACKETS IN
CHILD STATION
DEVICE 8a
FRAME 50
51
52
53
EMPTY
a
*

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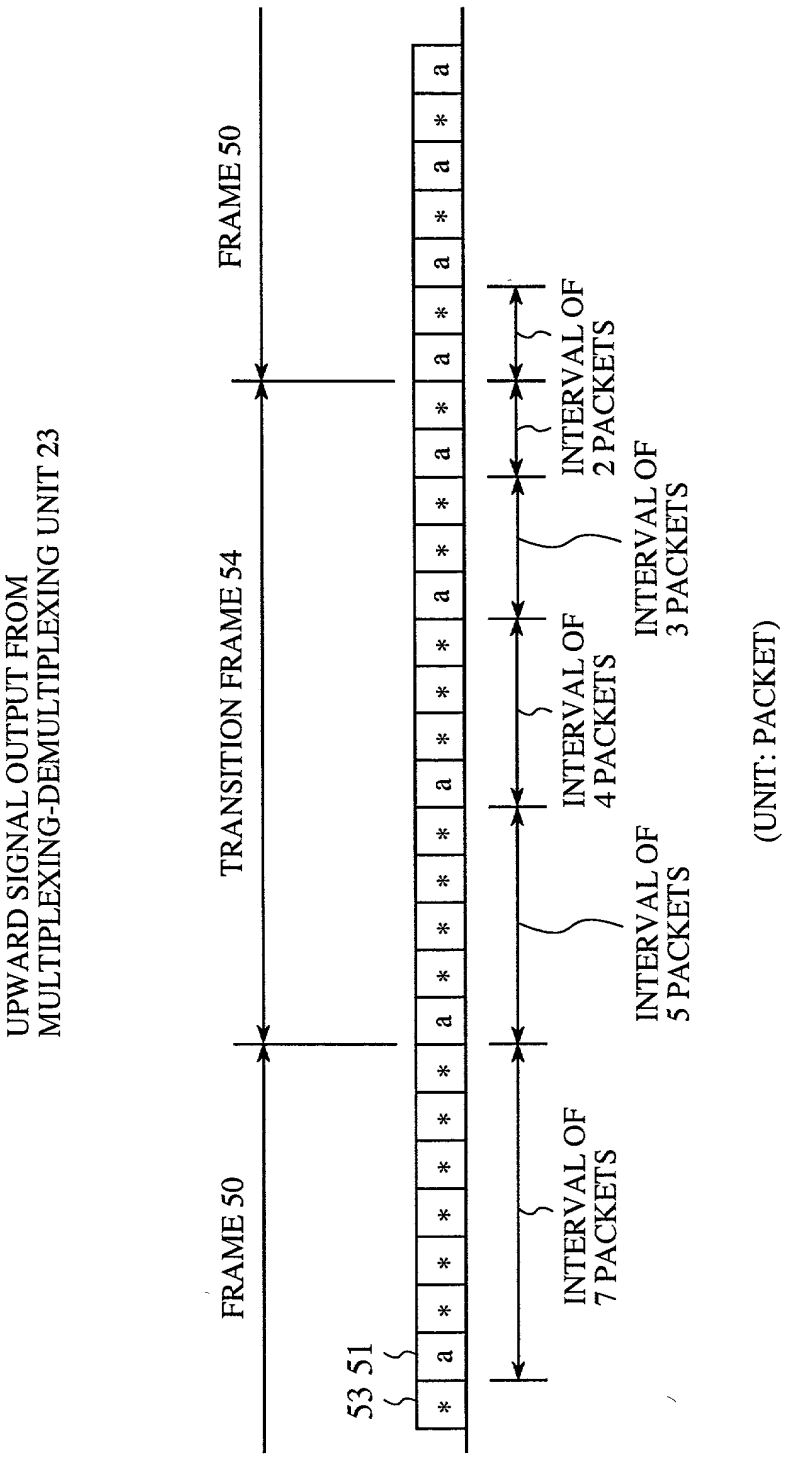
FIG.7



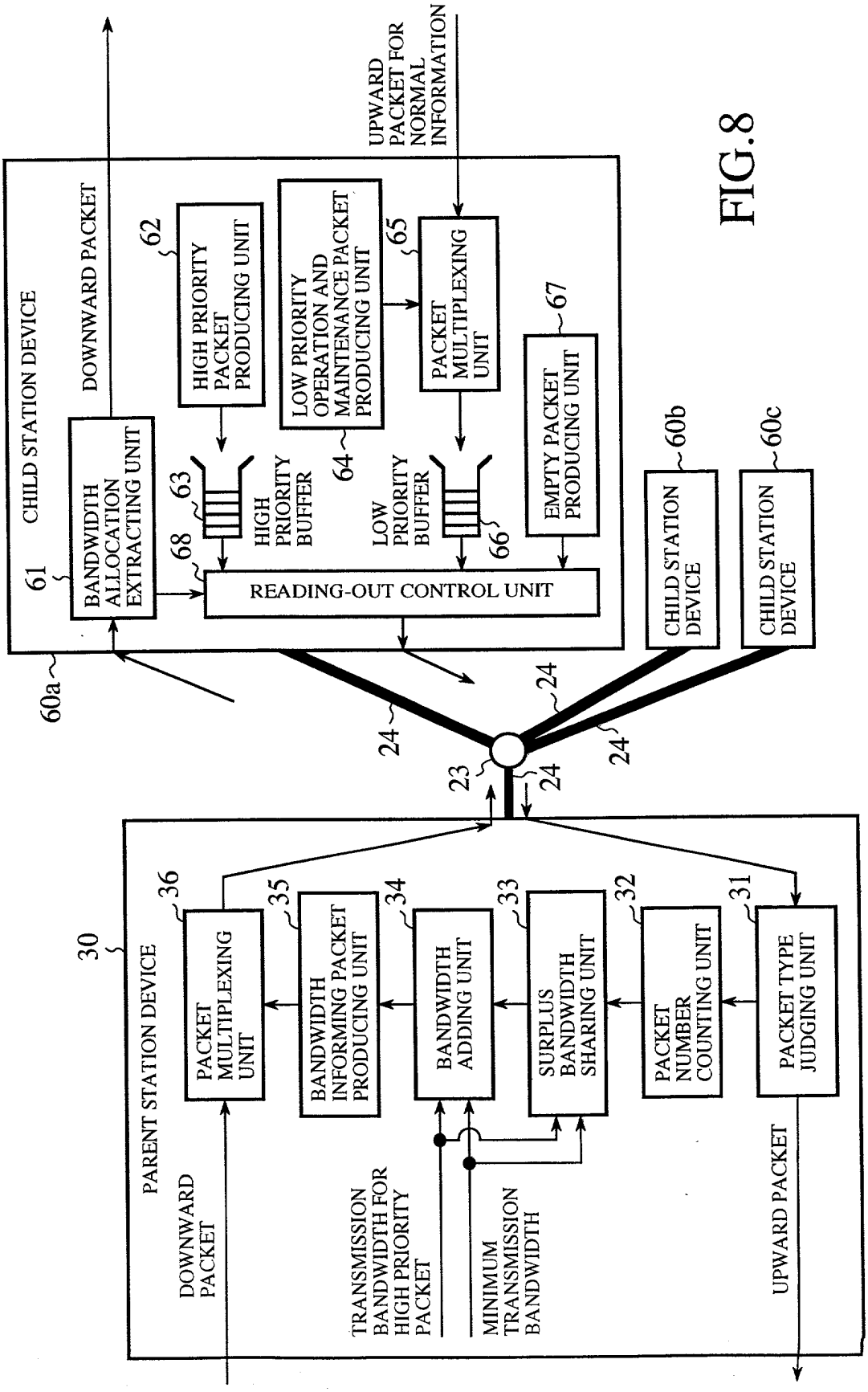

PARENT STATION DEVICE
30
DOWNWARD PACKET
TRANSMISSION BANDWIDTH FOR HIGH PRIORITY PACKET
MINIMUM TRANSMISSION BANDWIDTH
UPWARD PACKET
PACKET MULTIPLEXING UNIT
36
BANDWIDTH INFORMING PACKET PRODUCING UNIT
35
BANDWIDTH ADDING UNIT
34
SURPLUS BANDWIDTH SHARING UNIT
33
PACKET NUMBER COUNTING UNIT
32
PACKET TYPE JUDGING UNIT
31
23
24
CHILD STATION DEVICE
60a
60b
60c
CHILD STATION DEVICE
CHILD STATION DEVICE
BANDWIDTH ALLOCATION EXTRACTING UNIT
61
DOWNWARD PACKET
HIGH PRIORITY PACKET PRODUCING UNIT
62
HIGH PRIORITY BUFFER
63
LOW PRIORITY OPERATION AND MAINTENANCE PACKET PRODUCING UNIT
64
PACKET MULTIPLEXING UNIT
65
LOW PRIORITY BUFFER
66
EMPTY PACKET PRODUCING UNIT
67
68
READING-OUT CONTROL UNIT
UPWARD PACKET FOR NORMAL INFORMATION

FIG.8

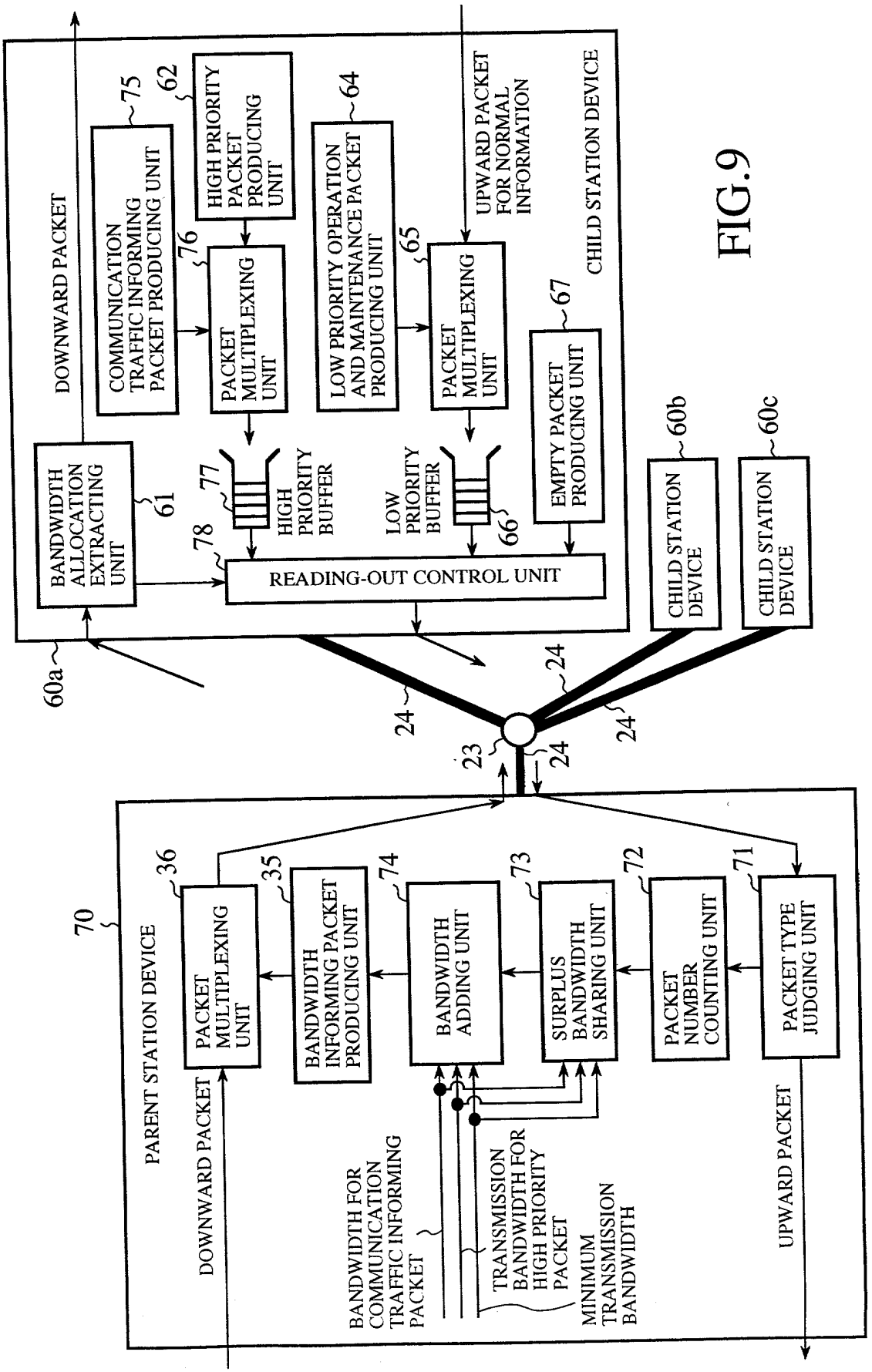

PARENT STATION DEVICE
70
DOWNWARD PACKET
PACKET MULTIPLEXING UNIT
36
BANDWIDTH INFORMING PACKET PRODUCING UNIT
35
BANDWIDTH ADDING UNIT
74
SURPLUS BANDWIDTH SHARING UNIT
73
PACKET NUMBER COUNTING UNIT
72
PACKET TYPE JUDGING UNIT
71
UPWARD PACKET
BANDWIDTH FOR COMMUNICATION TRAFFIC INFORMING PACKET
TRANSMISSION BANDWIDTH FOR HIGH PRIORITY PACKET
MINIMUM TRANSMISSION BANDWIDTH
23
24
24
24
60a
CHILD STATION DEVICE
60b
CHILD STATION DEVICE
60c
CHILD STATION DEVICE
DOWNWARD PACKET
BANDWIDTH ALLOCATION EXTRACTING UNIT
61
COMMUNICATION TRAFFIC INFORMING PACKET PRODUCING UNIT
75
HIGH PRIORITY PACKET PRODUCING UNIT
62
PACKET MULTIPLEXING UNIT
76
LOW PRIORITY OPERATION AND MAINTENANCE PACKET PRODUCING UNIT
64
PACKET MULTIPLEXING UNIT
65
EMPTY PACKET PRODUCING UNIT
67
UPWARD PACKET FOR NORMAL INFORMATION
CHILD STATION DEVICE
HIGH PRIORITY BUFFER
77
LOW PRIORITY BUFFER
66
READING-OUT CONTROL UNIT
78

FIG.9

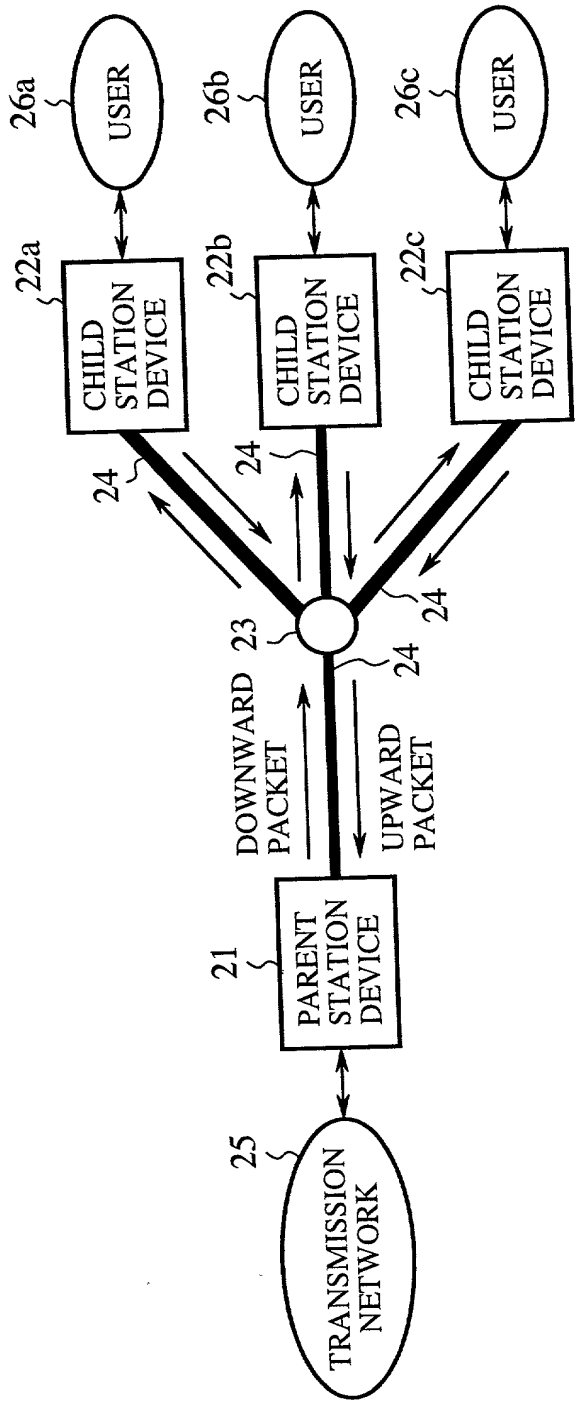



FIG.10 (PRIOR ART)

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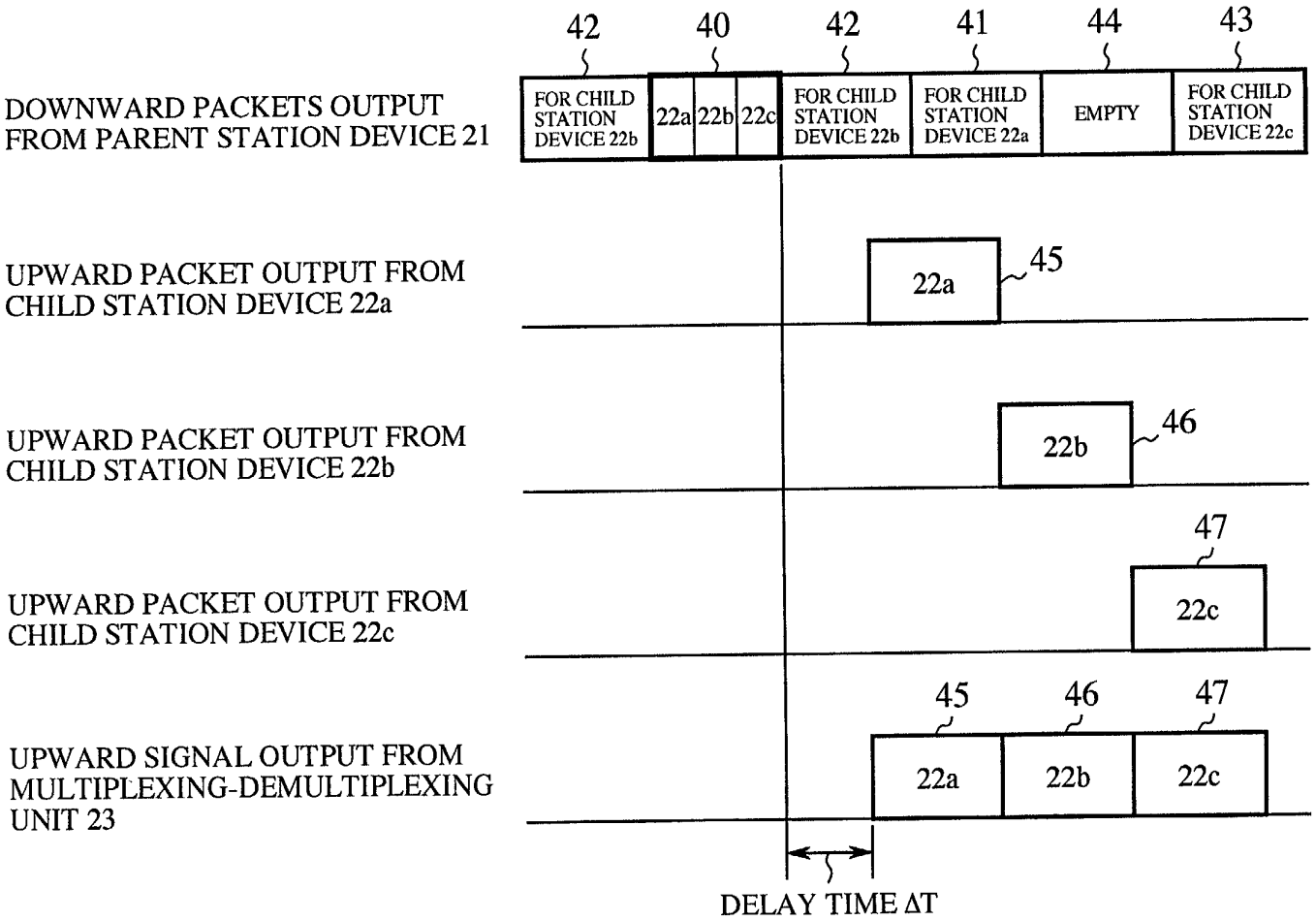
FIG.11 (PRIOR ART)



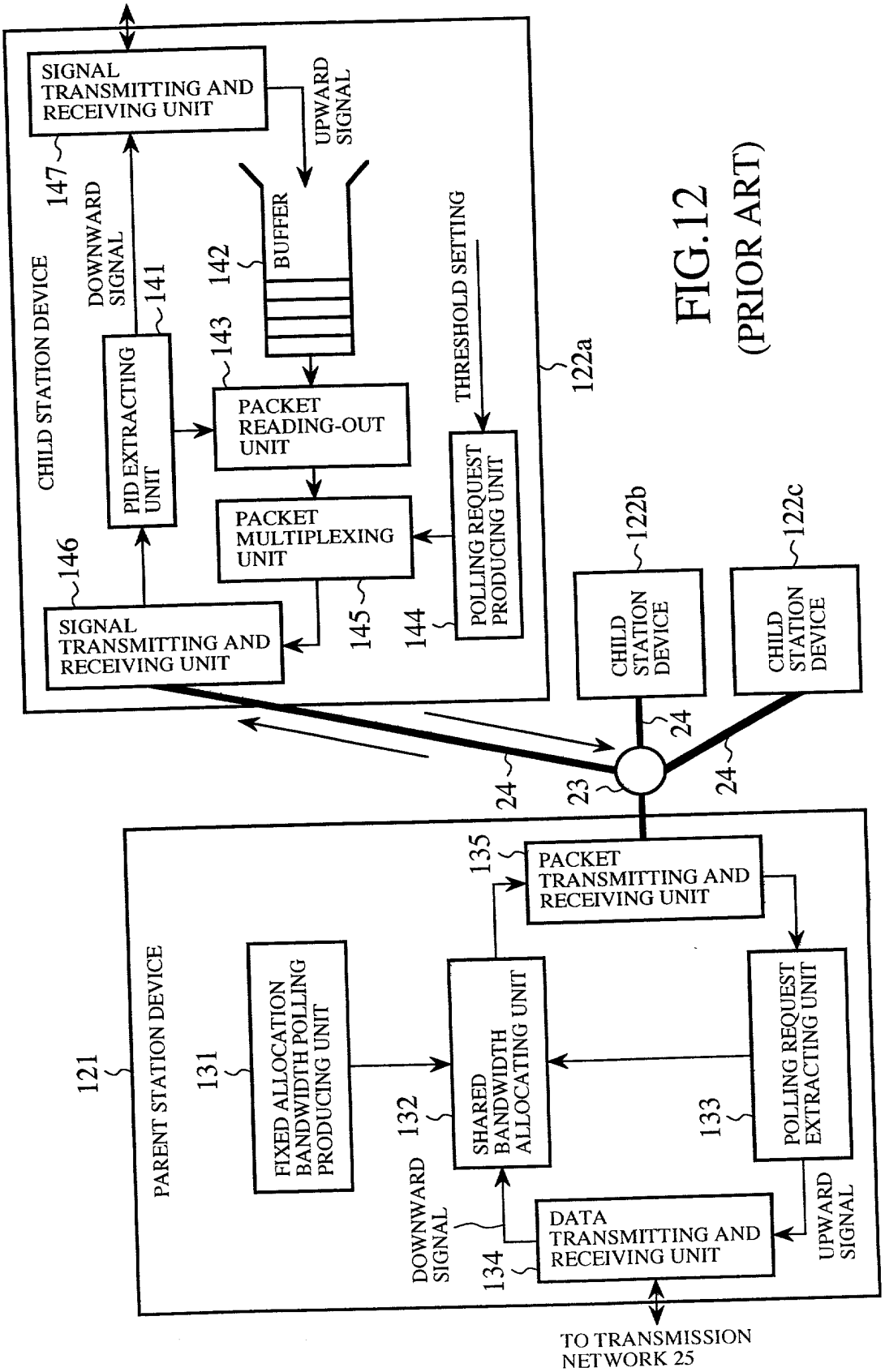
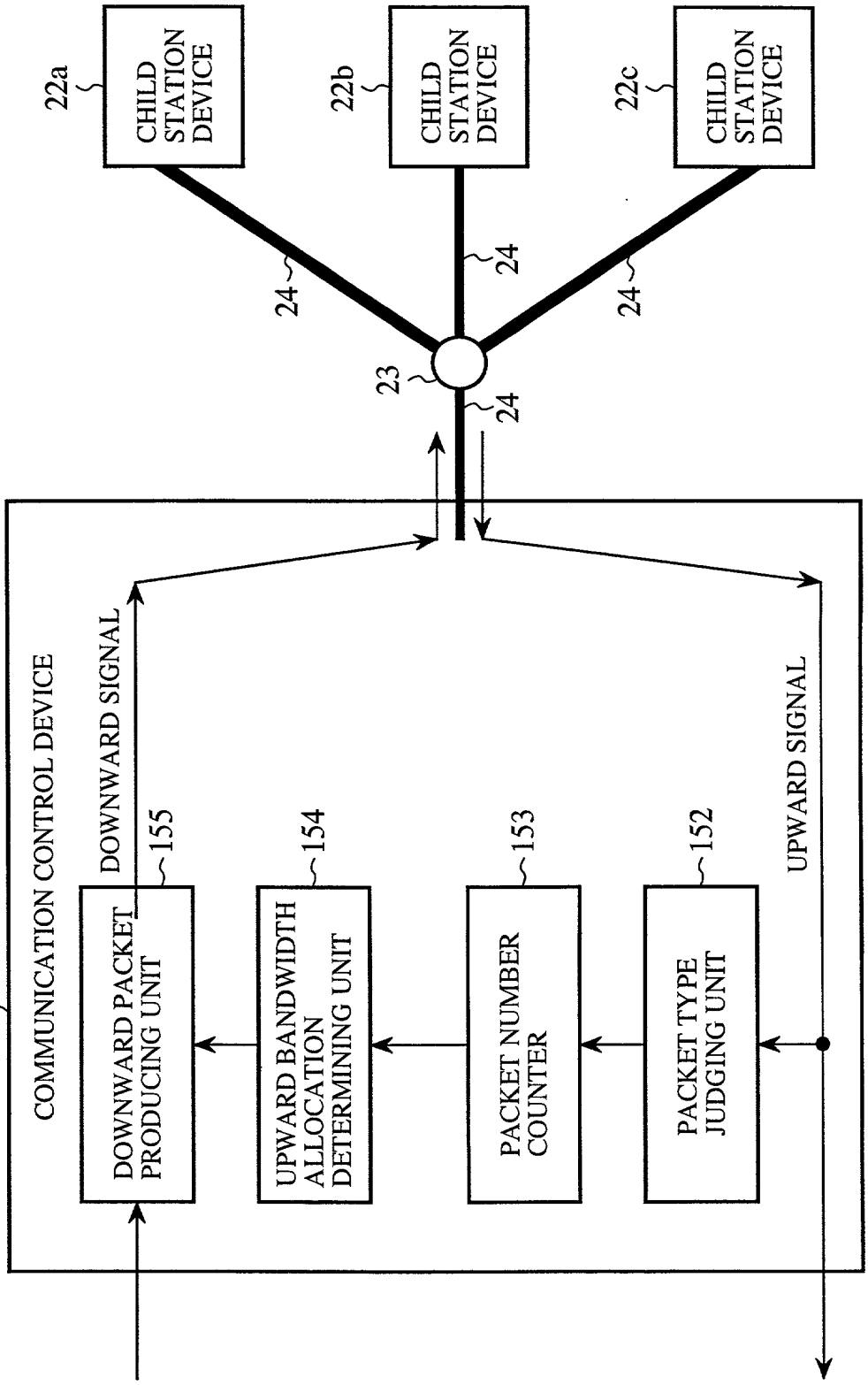



FIG.12
(PRIOR ART)

FIG.13 (PRIOR ART)



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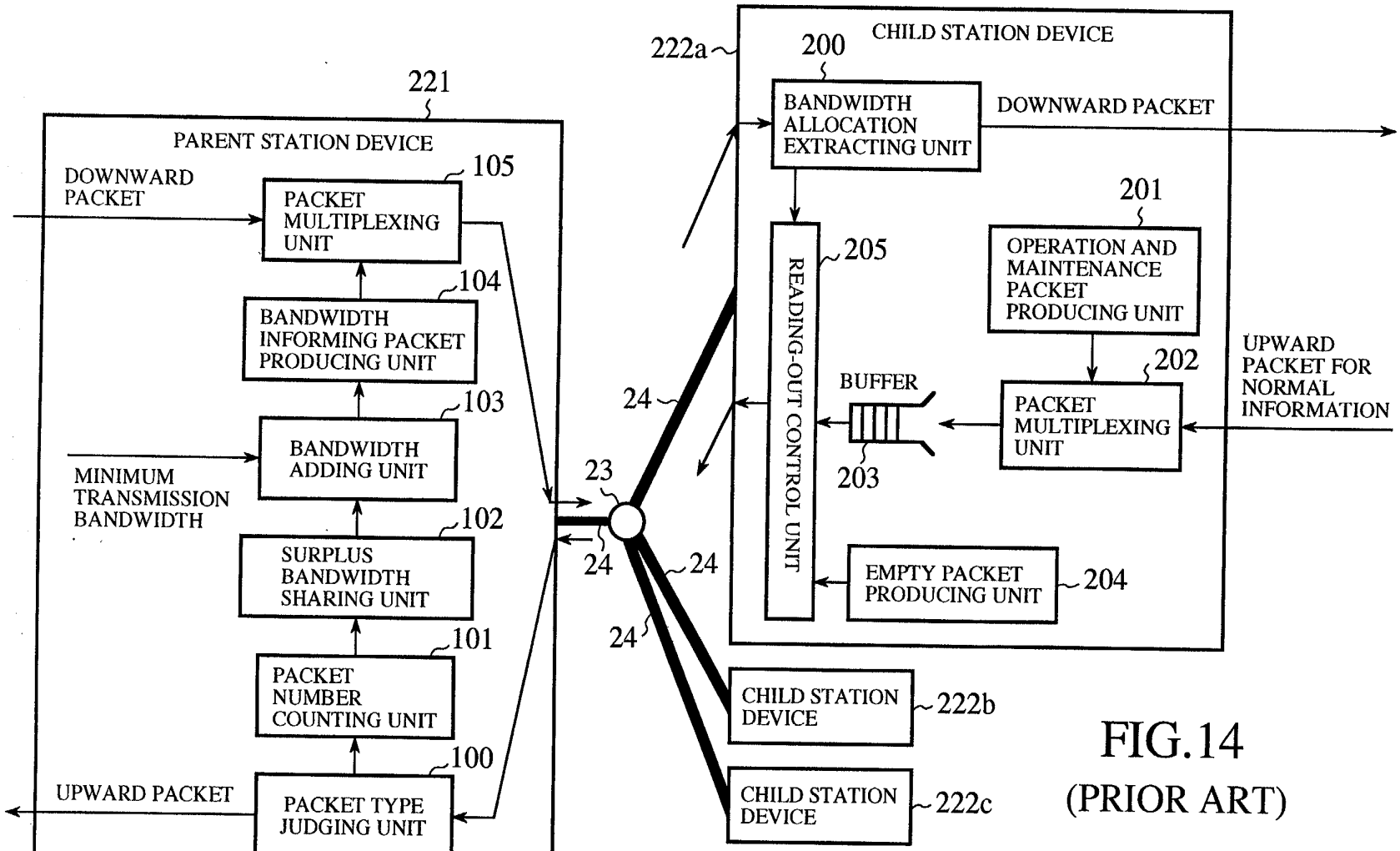


FIG.14
(PRIOR ART)



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